

Claims

1. Optical transmission system comprising at least one transmitter, at least one transmission line (14), at least one optical fiber amplifier, and at least one receiver, the optical fiber amplifier being designed to show a flat characteristic of output power versus wavelength, wherein the optical fiber amplifier is designed to show the flat output characteristic in response to a flat characteristic of a first input power level versus wavelength, at least one coupler for coupling at least one Raman amplifier to the optical transmission system, the Raman amplifier having a Raman gain that is tilted in a direction opposite to a tilt of the optical fiber amplifier that would occur in response to a flat characteristic of a second input power level versus wavelength.
2. The system of claim 1, wherein the optical fiber amplifier is an Erbium Doped Fiber Amplifier.
3. The system of claim 1, wherein the coupler is a multiplexer.
4. The system of claim 1, wherein the coupler is a circulator.
5. The system of claim 4, wherein the circulator substitutes an isolator.
6. The system of claim 1, wherein the at least one Raman

amplifier is added to the system leaving the remaining system unchanged.

7. The system of claim 1, wherein the at least one Raman amplifier comprises a plurality of Raman pumps, the wavelengths and powers of which being chosen to result in a predetermined gain tilt.

8. The system of claim 7, wherein the Raman amplifier comprises three Raman pumps.

9. The system of claim 8, wherein each Raman pump emits a certain power with a spectrum having a maximum in the 14xx nm wavelength range, each maximum referring to a different wavelength, the emitted power allocated to a spectrum with a maximum at a shorter wavelength exceeding the emitted power allocated to a spectrum with a maximum at a longer wavelength.